

## **Historic, archived document**

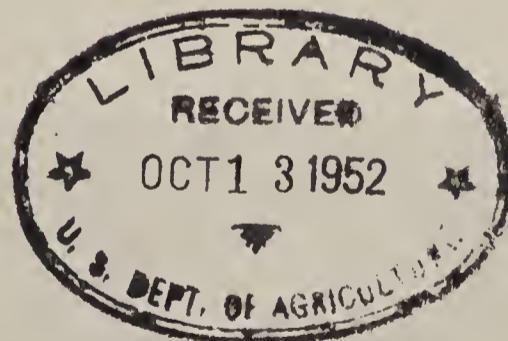
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*Ayer*

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH ADMINISTRATION  
Bureau of Plant Industry, Soils, and Agricultural Engineering

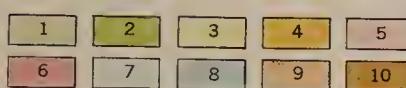
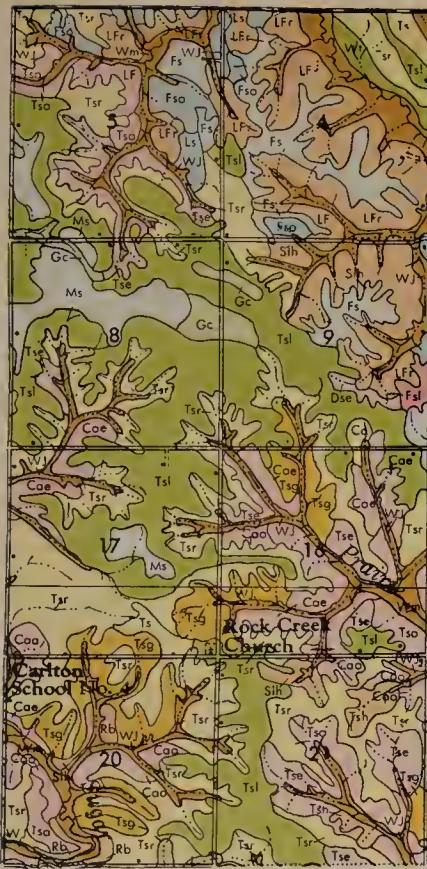
SOUND LAND CLASSIFICATION  
RESTS ON SOIL SURVEYS



It is the function of the national cooperative soil survey of the U. S. Department of Agriculture and the State land-grant colleges to furnish basic land classification for all farmers and all agricultural agencies--research, educational, and service.

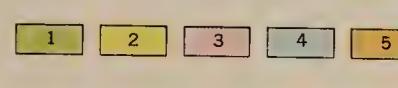
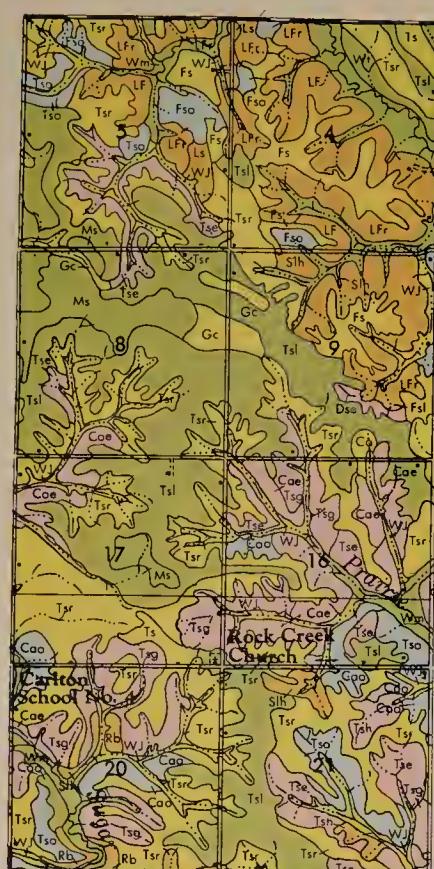


### SOIL MANAGEMENT GROUPS



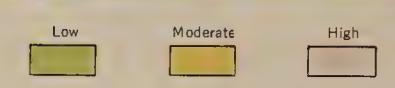
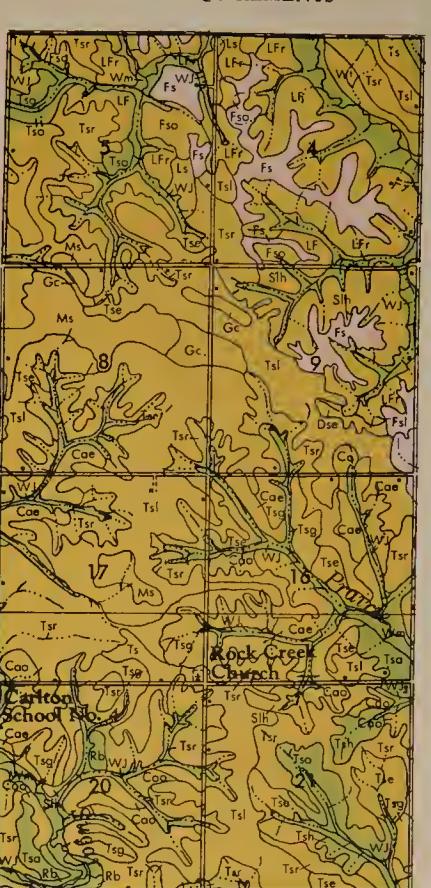
Each group has common soil management problems and responds to a common set of practices although each soil type has specific needs.

### LAND USE CAPABILITIES (Soil Conservation Service)

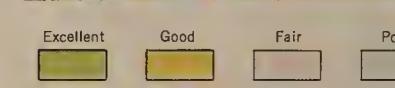


THE BASIC SOIL MAP  
WITH INTERPRETIVE DATA IS FURNISHED  
IN A SOIL SURVEY REPORT.  
THIS MAP PROVIDES THE ESSENTIAL  
FACTS TO CLASSIFY LAND FOR  
MANY SPECIFIC PURPOSES.

### LIME REQUIREMENTS



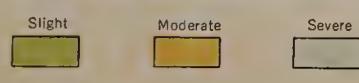
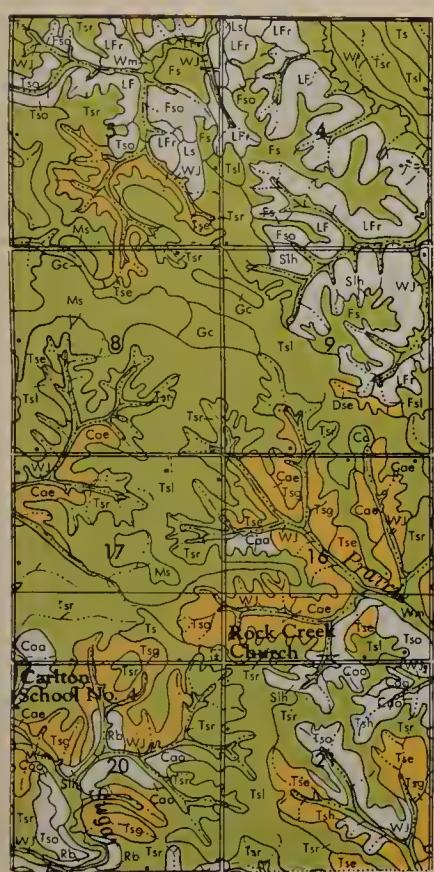
### SUITABILITY FOR PASTURE



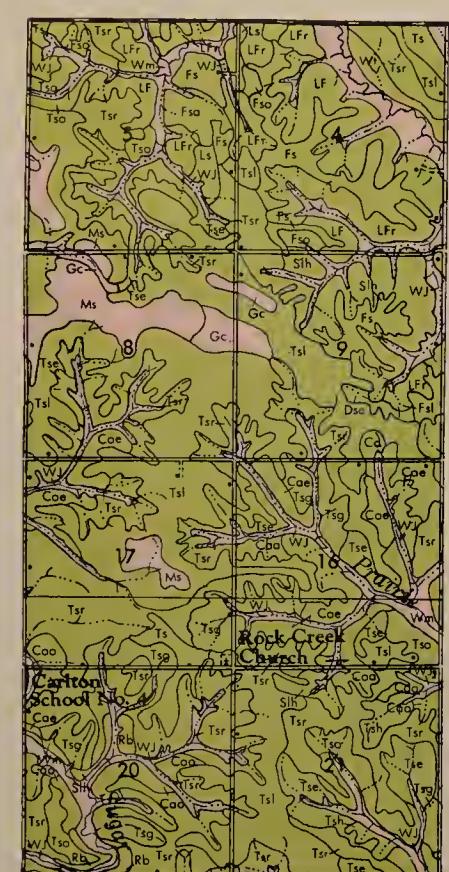
TO  
CLASSIFY LAND  
FOR

TO  
CLASSIFY LAND  
FOR

### EROSION HAZARD



### ARTIFICIAL DRAINAGE

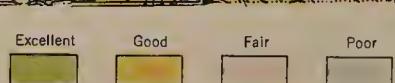
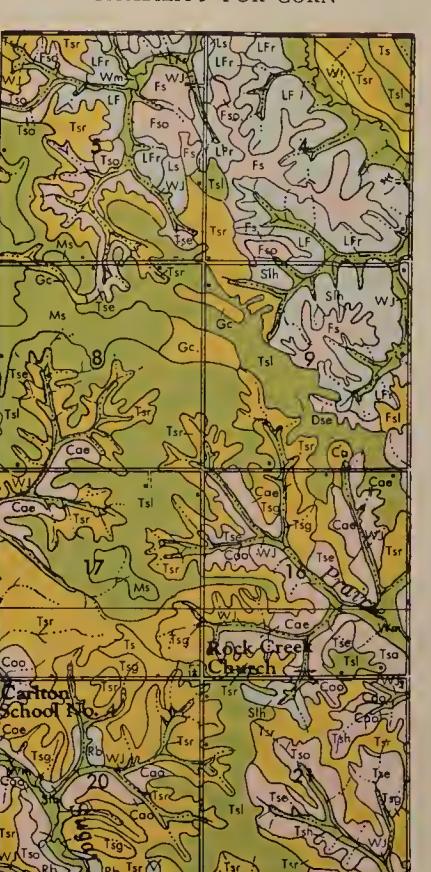


THE BASIC SOIL MAP  
(Portion of Tama County, Iowa)

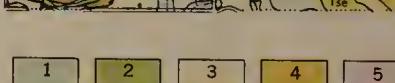
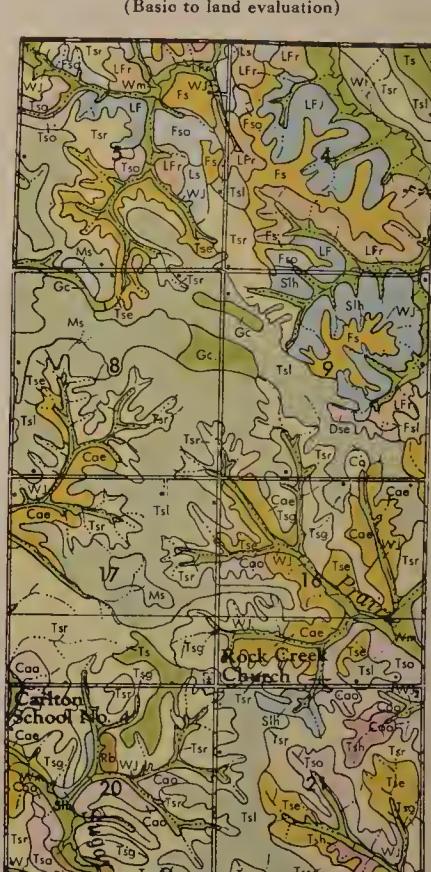
### LEGEND

Carrington loam, eroded gently rolling phase (8-12 percent slopes)	Fayette silt loam, eroded rolling phase (12-16 percent slopes)	Muscatine silt loam, eroded rolling phase (12-16 percent slopes)
Cle	Fso	Tso
Carrington silt loam (3-8 percent slopes)	Fayette silt loam, level phase (1-3 percent slopes)	Rough broken land
Ca	Fsl	Rb
Carrington silt loam, eroded gently rolling phase (8-12 percent slopes)	Garwin silty clay loam	Shelby loam, eroded hilly phase (16 percent slopes and over)
Cae	Gc	Sih
Carrington silt loam, eroded rolling phase (12-16 percent slopes)	Lindley-Fayette silt loams, (16 percent slopes and over)	Tama silt loam, (3-8 percent slopes)
Cao	Lf	Ts
Downs silt loam, eroded gently rolling phase (8-12 percent slopes)	Lindley-Fayette silt loams, (16 percent slopes and over)	Wabash-Judson silt loams
Dse	Lfr	Wj
Fayette silt loam (3-8 percent slopes)	Tama silt loam, eroded phase (3-8 percent slopes)	Wabash silt loam
Fs	Tsr	Wm
Fayette silt loam, eroded gently rolling phase (8-12 percent slopes)	Lindley silt loam, (12-16 percent slopes)	Waukesha silt loam
Fse	Lo	Wt
Fayette silt loam, eroded gently rolling phase (8-12 percent slopes)	Lindley silt loam, gently rolling phase (8-12 percent slopes)	Tama silt loam, eroded hilly phase (16 percent slopes and over)
Fsg	Lsg	Tsh

### SUITABILITY FOR CORN



### SOIL PRODUCTIVITY GROUPS (Basic to land evaluation)



# SOUND LAND CLASSIFICATION

## LAND CLASSIFICATION FOR:

American farmers are rapidly increasing the efficiency with which they grow crops. Agricultural research is contributing to this greater efficiency at an accelerated rate. Land classification is needed for applying improved methods growing out of research. It is essential for determining present conditions on each farm and for permitting re-interpretation of those conditions as science progresses and economic conditions change. Especially to meet national emergencies, farmers must change their practices and crops rapidly without loss of efficiency.

### BETTER FARMING

Agricultural research has given American farmers many new and improved crops, fertilizers, machines, and methods that are far superior to the old ones. The effectiveness of using modern techniques on a specific farm depends upon how well the methods and crops are adapted to the types of soil on that farm. Land classification is a tool vital to this adapting process.

### INDIVIDUAL FARM PLANNING

Careful planning by the individual farmer is essential for efficient production and soil conservation. Economic success in farming is becoming more and more dependent on the correctness of the fit of crops and management practices to the soil, because modern farming involves large investments for machinery and equipment and many cash outlays for power, seed, fertilizer, and other materials.

Effective farm planning calls for land classification that permits accurate prediction of results from various uses to which the soil may be put.

### ADVISORY AND ACTION PROGRAMS

Land classification is also needed by the numerous publicly supported educational and service agencies that help farmers. How good a job these agencies do depends upon how well they fit their assistance to land conditions.

Both farmers and public agencies require a system of land classification that reflects the results from past and current research. And more than that, they need a system through which new knowledge can be applied for years to come.

### OTHER PURPOSES

In planning and developing areas for irrigation, land classification is necessary to predict the results from the use of irrigation water in every part of an irrigation district, and for developing cropping and soil management systems for individual farms in irrigation projects.

Land classification is being used more and more as a basis for determining land values for tax assessments, land sales, land credit, production credit, etc. Land classification is also being used in locating and designing roads, highways, airports, and other public facilities.

## R E S T S      O N      S O I L      S U R V E Y S

## S O I L   S U R V E Y S   P R O V I D E :

The basic soil survey is both scientific and practical. It is designed to meet all the important practical demands for making the results of science and technology available to farmers and farm advisors. It presents basic soil facts for present and future interpretation. All significant kinds of soils are classified and mapped.

## DETAILED MAPS

A soil map is a key part of each soil survey report. Each kind of soil shown on the soil map has a name, a definition, and a set of interpretive data. Thousands of different soil types have been identified. They vary widely in the kinds of crops they will grow and in response to management. Wide variations often occur on individual farms.

INTERPRETIVE  
DATA

The interpretive data furnish a guide for land classification. They include the practical combinations of management practices for each soil type, the estimated yield or productivity rating of adapted crops, and the effects of management on future soil productivity. These are based on both farm experience and the results of agricultural research.

With these facts and the soil map, predictions can be made about the results from using a specific type of soil in a particular way.

## A SOUND BASIS

The soil survey, including maps and text, is a basic land classification designed to serve many uses. From it many simpler land classifications can be made for particular purposes. (See example maps inside.)

Once the basic soil survey is made accurately, little if any additional field work is needed for a whole host of special land classifications.

A PERMANENT  
BASIS

Special land classifications are soon out of date because they depend upon interpretation. As technology and economic conditions change, the interpretations change. With a basic soil survey, however, they may be revised easily. It is the combination of soil management practices that change, not the soils themselves.

The basic soil map is dynamic in its interpretations and use for many years. This soil survey system has been developed over a period of 50 years. Thousands of scientists have contributed their research and thought to it.

Soil survey reports can be obtained from members of congress, State agricultural experiment stations, or the U. S. Department of Agriculture, Washington 25, D. C.

A   S O I L   S U R V E Y   P R O V I D E S  
A   B A S I C   S O I L   M A P   W I T H  
I N T E R P R E T I V E   D A T A   T O   C L A S S I F Y  
S O I L S   F O R   S P E C I F I C   P U R P O S E S

Soil Management Methods	Fertility Needs
Crop Adaptability	Liming Requirements
Grassland Management	Real Estate Values
Land-Use Capabilities	Tax Assessments
Erosion Hazard	Highway Construction
Drainage Requirements	Many Others

(See example maps inside)

#### STATUS OF STATE-FEDERAL SOIL SURVEY

Detailed Soil Survey Reports with colored maps have been issued for 1,580 counties in the United States covering about 650,000,000 acres.

Reports currently are being prepared for 95 additional counties and the soils are being surveyed in 50 other counties. Reconnaissance surveys have already been completed for much of the remaining farm area.

Soil survey reports will be issued for all counties as rapidly as detailed survey work can be completed.

June 1950